DOCUMENT RESUME

ED 264 031 PS 015 513

AUTHOR Weber, Larry J.; And Others
TITLE Fundamental and Regular Elementary Schools: Do Differences Exist?
PUB DATE Feb 85
NOTE 22p.; Paper presented at the Meeting of the Eastern Educational Research Association (8th, Virginia Beach, VA, February 7-9, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *Back to Basics; *Classroom Environment; Comparative Analysis; *Discipline; Educational Environment; Elementary Education; *Elementary Schools; Peer Relationship; Public Schools; *Self Concept; Teacher Student Relationship
IDENTIFIERS *Fundamental Schools

ABSTRACT

This study compared the academic achievement and other outcomes of three public fundamental elementary schools with three regular elementary schools in a metropolitan school district. Modeled after the John Marshal Fundamental School in Pasadena, California, which opened in the fall of 1973, fundamental schools differ from regular schools in that they are based on a cooperative agreement among administrators, teachers, parents, and students; teachers and administrators function as authority figures supported by parents; and the curriculum emphasizes discipline and the "3 Rs." The other outcomes investigated included student self-concept and school and classroom learning and behavioral climates. Results indicated that fundamental school students performed as well as or better than other students on standardized achievement tests as well as in self-concept and discipline variables and that behavioral and learning climate ratings were higher in the fundamental schools. (Author/RH)

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Fundamental and Regular Elementary Schools: Do Differences Exist?

by

Larry J. Weber

Janice K. McBee

John Burton

Terry Wildman

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Virginia Polytechnic Institute

and

State University

Paper presented at the Eastern Education Research Association, Virginia Beach, Virginia, 1985

Abstract

This study compared the academic achievement and other outcomes of three public fundamental elementary schools with three regular elementary schools in a metropolitan school district. Results indicated that fundamental school students performed as well or better than other students on standardized achievement test, self concept discipline variables and that the fundamental schools had higher behavioral and learning climate ratings.

Fundamental and Regular Elementary Schools: Do Differences Exist?

The "Back to Basics" movement in public education began as an alternative to the perceived permissiveness in public education of the 1960's, and lead to the origin of fundamental schools. The philosophies of fundamental schools have been patterned after that of John Marshal Fundamental School in Pasadena, California, which opened in the fall of 1973 (Neill, 1976; Jones, 1976; Johnson and Pearson, 1979; Ruffra, 1977; Housden, 1980), and is based upon the cooperative agreement between the school's administrators, teachers, parents and students. Teachers and school administrators are authority figures and parents (by contractual agreement) support the philosophy and rules of the school. Along with discipline, the curricula of fundamental schools emphasize the basics, the 3 R s.

The purpose of this study was to compare achievement and other desired outcomes of three fundamental with three non-fundamental, regular, elementary schools in a metropolitan school system. The three fundamental schools were matched, in terms of social economic status of community and size of school, with three regular elementary schools. (Two of the fundamental schools began operating in the fall of 1978, and the third one converted in the fall of 1979.) Included in this study are comparisons on the following components:

1. Educational Achievements of Students
2. Student Self-Concept

School and Classroom Learning and Behavioral Climates

Achievement

Comparisons on the educational achievement of 4th and 6th grade students in fundamental schools with students in regular schools were made using Science Research Association (SRA) Achievement Test results as the student outcome. In conjunction with the state testing program, all students in selected grades are administered the SRA Achievement merit tests. For this study a random sample of 90 fourth graders and 90 sixth graders from each type of school were selected. SRA Achievement test scores in reading, language arts, mathematics, social studies and science, as well as composite, were included in the analysis. To compare achievement gains of students from the two types of schools, two different analyses were conducted. Both took into account the possibility of pre-existing aptitude differences. In the first analysis ANCOVA was used, covarying on STEA/EAS (aptitude) scores, to control statistically any initial aptitude differences in the students which might confound differences between the two groups of students. In the second analysis, correlated t-tests were calculated for each group of students to determine if significant SRA test score gains were made from grade 4 to grade 6 for either the fundamental or regular school students.

Findings from the ANCOVA's are presented in Tables 1 and 2 for grades 4 and 6, respectively. For grade 4, fundamental students scored higher than regular school students. These

results were significant ($p<.01$) on five of the six comparisons. Non-significant findings existed only for the social studies test. While the adjusted achievement scores of sixth grade students in fundamental schools were greater than the adjusted achievement scores of students in regular schools, on no occasion were these differences significant.

Insert Tables 1 and 2

Results of the correlated t-test analyses are presented in Tables 3 and 4 for respectively fundamental and regular school students. Only those students who had been enrolled at least 2 years in their respective schools were included in this part of the study. Students in fundamental schools made a significant gain in one test area, math, from grade 4 to 6; students in regular schools made significant gains in four test areas, composite, language arts, math and science.

Insert Tables 3 and 4

These latter results seem to be inconsistent with findings from the ANCOVA analyses and suggest that students in regular schools had better achievement gains on SRA tests than did students in the fundamental schools. Additional inquiry into the apparent inconsistency in the findings lead us to offer the following explanation as a possible reason for the discrepancy. If a student's relative performance in the sixth grade is the same as it was in the fourth grade, then we conclude that he has not made any significant gains. However, if a student's achievement in the fourth grade is lower than his ability level and by the sixth grade he performs at a higher level, we conclude that the student has made gains in academic achievement. This is the situation that occurred for regular school students, who gained more than would be expected for them between the 4th and 6th grades, while the fundamental school students maintained their same relative stance between the 4th and 6th grades. Thus, the finding of superiority for fundamental school students at the fourth grade level was not present when comparisons were made between the two groups at the 6th grade level.

Self-Concept

A child's image of himself/herself is an important determinant of future adjustment, and experiences that children have in school have an impact on their attitudes about themselves. Therefore data about how students view themselves were gathered as a part of this study. To compare the self-

concept of students in fundamental schools with students in regular schools, a 29-item instrument adapted from Bledsoe and Garrison's Self-Concept Scale (1962) was developed and administered to 182 students (108 fourth graders and 74 sixth graders). Students rated themselves according to a list of 29 positive and negative items which described personal qualities.

After negative items were recoded so that all items would be consistently scored, a mean score for each student then was calculated. Using a t-test, it was found that there was no significant difference between self-concept scores of regular and fundamental school students. Results are shown in Table 5.

Insert Table 5

Learning and Behavioral Climate

Comparisons between regular and fundamental elementary schools on school and classroom learning and behavioral climates were made using information gathered from visiting evaluation teams and from the teaching faculty in the schools.

Two six-member teams visited appointed schools over a two-day period. Members of each team (evaluation consultants, school administrators and representative parents from both types of schools) observed selected characteristics in both regular and

fundamental schools. Using a 25-item survey covering five areas of concern, condition of buildings and grounds, learning climate, student/student interaction, student/teacher interaction and conduct about the building, team members rated the learning and behavioral climates of the schools. Mean scores for each of the five areas were calculated for each team member. The results of five t-tests, using the mean area rating as the dependent variable, are shown in Table 6.

Insert Table 6

In four of the five areas (learning climate, student/student interaction, student/teacher interaction and conduct about the building) fundamental schools were rated significantly better than regular schools. Although it was found that the students in fundamental schools interacted better with their peers than did students in regular schools, the team members indicated that there was a dearth of such interaction in the classrooms in fundamental schools. No significant differences were observed on matters related to buildings and grounds.

To assess teachers' perspectives on the learning environments in their respective schools, faculty responded to an 11-item survey to rate behaviors they had seen or encountered.

Items covered such topics as general student deportment, student/teacher relationships and quality of support from parents. Findings from t-tests computed for each problem topic are reported in Table 7. For 10 of the 11 items, teachers in the fundamental schools rated their students more favorably than did teachers in regular schools. For eight behaviors surveyed, the differences were significant. Only for items related to class distractions (i.e. out-of-class activities and visitors) and for a question about drug abuse were no significant differences found.

Insert Table 7

Summary

For this study, comparisons between elementary students in fundamental and regular schools were made on the achievement, self-concept of students, school and classroom learning climates and discipline. Schools were matched with respect to demographic characteristics and statistical analysis incorporated initial differences among the students.

Results from the analyses indicated that the fundamental schools generally were better than or as good as the regular schools. After controlling for scholastic aptitude of 4th grade students, fundamental school students performed better than regular school students on standardized achievement tests, with the exception of social studies. The same statistical procedure conducted on 6th grade students indicated that there was no difference between the academic achievement of students in the two school settings. Early grade differences tend to level out by the later elementary grades. No difference between the self-concept of fundamental versus regular school students was found. This finding is deemed important since the image that children have of themselves ought not to be negatively affected by their educational environment. On four of the five matters related to behavioral and learning climates in the schools surveyed, the fundamental schools were rated significantly higher than the regular schools. However, there was a lack of student/student interaction in fundamental schools. No difference between the

school types in the rating of buildings and grounds was supported by this research.

Since the philosophy of fundamental schools stress discipline along with emphasis on the basis skills, there is a need to assess if other needs of the students are receiving attention. Although the self-concept survey showed that differences between students in the two schools did not exist, other areas of personal development such as locus of control, attitudes toward school, attitudes toward learning, and attitudes toward peers should be investigated.

Another concern with fundamental elementary schools is the quality and quantity of interaction students have with their teachers and with their peers. Members of the evaluation teams noticed a lack of discourse/interaction with anyone other than the teacher. And such interaction was teacher-initiated. Casual observations in the fundamental schools indicated to us that the direct teaching method was the norm. However, research indicates that interaction may facilitate learning and that teacher-dominated classrooms may be counter-productive. Additional research will need to be done to evaluate the validity of our observations.

In conclusion, it can be said that the students in fundamental elementary schools are performing as well as, or better than, students in regular schools on variables investigated in this research. However, further studies need to

be done to identify factors operating in fundamental schools that help them to achieve their objectives. If the elements which contribute to the achievement of the objectives of fundamental schools can be uncovered, and if they are deemed desirable by the general population, then they can be incorporated into the programs of other schools.

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TABLE 1

Results of ANCOVA Tests on
SRA Achievement Test Data for
Fundamental & Regular Schools

Grade 4

	Fundamental Schools (N=90)			Regular Schools (N=92)			Significance[1]
Test	Unadjusted $\bar{x}$ (Stanine)	Standard Deviation	Adjusted $\bar{x}$ (Stanine)	Unadjusted $\bar{x}$ (Stanine)	Standard Deviation	Adjusted $\bar{x}$ (Stanine)	
Composite	5.92	1.45	5.73	4.89	1.83	5.09	**
Reading	5.67	1.64	5.46	4.78	1.98	4.98	**
Language Arts	6.26	1.49	6.07	5.01	1.86	5.19	**
Math	5.97	1.57	5.78	4.98	1.98	5.16	**
Social Studies	5.57	1.59	5.39	5.00	1.96	5.17	---
Science	5.68	1.46	5.50	4.78	1.95	4.96	**

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1 * indicates $p<.05$

** indicates $p<.01$

TABLE 2

Results of ANCOVA Tests on
SRA Achievement Test Data for
Fundamental & Regular Schools

Grade 6

	Fundamental Schools (N=90)			Regular Schools (N=92)			Significance[1]
Test	Unadjusted $\bar{x}$ (Stanine)	Standard Deviation	Adjusted $\bar{x}$ (Stanine)	Unadjusted $\bar{x}$ (Stanine)	Standard Deviation	Adjusted $\bar{x}$ (Stanine)	
Composite	6.40	1.78	6.21	5.73	1.86	5.92	---
Reading	6.06	1.85	5.87	5.34	1.89	5.51	---
Language Arts	6.32	1.82	6.14	5.89	1.97	6.06	---
Math	6.26	1.76	6.09	5.74	1.70	5.89	---
Social Studies	6.10	1.67	5.94	5.73	1.79	5.89	---
Science	5.77	1.89	5.66	5.50	1.64	5.60	---

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1 * indicates $p<.05$

** indicates $p<.01$

TABLE 3

Correlated t-Test Data
for
Fundamental Schools

Grades 4-6

(N=90)

	Grade 4		Grade 6		
Test	x-Score (Stanine)	Standard Deviation	x-Score (Stanine)	Standard Deviation	Significance[1]
Composite	6.21	1.56	6.40	1.78	---
Reading	6.12	1.62	6.06	1.85	---
Language Arts	6.27	1.59	6.32	1.82	---
Math	5.83	1.74	6.26	1.76	**
Social Science	6.09	1.60	6.10	1.67	---
Science	5.83	1.71	5.77	1.89	---

[1] * indicates $p<.05$

** indicates $p<.01$

TABLE 4

Correlated t-Test Data
for
Regular Schools

Grades 4-6

(N=90)

	Grade 4		Grade 6		
Test	x-Score (Stanine)	Standard Deviation	x-Score (Stanine)	Standard Deviation	Significance[1]
Composite	5.46	1.72	5.74	1.78	**
Reading	5.58	1.98	5.34	1.82	---
Language Arts	5.59	1.76	5.91	1.90	*
Math	5.20	1.58	5.76	1.60	**
Social Science	5.51	1.87	5.74	1.71	---
Science	5.12	1.70	5.49	1.63	*

[1] * indicates $p<.05$

** indicates $p<.01$

TABLE 5

Comparison of Fundamental and Regular Schools on Student Self-Concept

	Fundamental School Score	Regular School Score
Mean Score*	40.3	41.1
Standard Deviation	7.2	9.3

t-Statistic = .62 (not significant)

*Score Range: 29=good to 87=poor

TABLE 6

Comparison of Fundamental and Regular Schools
on Matters Related to Behavioral and
Learning Climates in the Schools

Category	Fundamental School Mean Score*	Regular School Mean Score*	t-Statistic	Significant Difference ($p<.05$)
Condition of Buildings & Grounds	4.6	4.7	.56	No
Learning Climate	4.4	3.8	2.5	Yes
Student/Student Interaction	4.7	3.8	2.57	Yes
Student/Teacher Interaction	4.7	4.0	2.5	Yes
Conduct About the Building	4.6	4.0	2.7	Yes

*Score Range: 1=poor to 5=good